



COLONY OF SEYCHELLES

ANNUAL REPORT

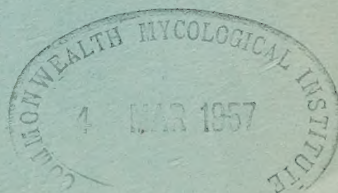
OF THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR

1955

Printed by the Government Printer,
at the Government Printing Office
Victoria, Mahé, Seychelles.





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Annual Report of the Department of Agriculture for the year 1955

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objectives, often opposed to the original ones and seemingly directed more towards a change in the social system than making "two blades of grass grow where one grew before" and growing them at a profit. In 1955 the Department made a start with getting back to the right lines for achieving the latter objective, and all that it implies. Public recognition and approval was to be seen, paradoxically, in the somewhat unconstructive remarks by some critics on the old order of things. However, many also realised that to throw the baby out with the bath water would be a little too drastic, and that activities must be scaled down or re-shaped over a period, even though some aspects of the transition are neither instructive nor profitable.

"Grand'Anse Estates" did not succeed, in the sixteen years of its existence, in popularising any new export crops nor in influencing estates to change their ways for the better. The Colony's stock-improvement and veterinary services, and a growing interest in bench-terracing are, however, the outcome of Colonial Development and Welfare Fund grants which were expended by the Estates. There has been an increment in local knowledge of certain crops, especially foodcrops, as a result of the, unfortunately unprofitable, activities of the Estates. A quite recent development on the Estates was the Leasehold Smallholding scheme, a somewhat belated return to one of the original objectives.

Leasehold Smallholdings are considered by some as an attempt to upset the social system but in point of fact smallholdings of a few acres already far outnumber the large estates.

Re-afforestation is proceeding apace under a Colonial Development and Welfare Fund grant and if funds are forthcoming for modest examples of good husbandry, for the trial and growing of new economic crops, and for the continuance of produce inspection, land settlement, stock improvement, simple veterinary services, minor local investigations, and the like, the Colony could have a Department of Agriculture of the right size. The Department should not be expected to earn revenue by engaging in any purely productive activity which can be equally well undertaken by private enterprise.

In brief, it may be said that the progress achieved in 1955 was mainly towards reducing the Department's own "back-garden" to a size more in keeping with that of this tiny Colony, and, meanwhile, maintaining useful services so far as the demands of production for production's sake permitted.

Weather

1955 was a year of unusually irregular rainfall distribution, the record of the East African Meteorological Department's local office indicating the quite remarkable figure of over thirty-seven inches in the month of January and unusually dry conditions in May, June, and July. High winds early in the year felled many coconuts and forest and garden trees which had withstood the normal winds of the Colony for generations.

The following figures were kindly supplied by the E. A. Met. Department's local office:

Rainfall and Air Temperature, Victoria

1955 Month.	Rainfall (inches)	Air temperature		(Degrees Fahrenheit)	
		Mean. Max.	Mean. Min.	Highest Max.	Lowest Min.
January	37.10	84.3	75.5	87.4	73.0
February	13.24	83.9	77.5	86.3	73.7
March	11.30	86.3	77.6	89.3	74.0
April	11.71	86.9	77.1	89.7	73.4
May	2.18	84.4	77.2	87.2	74.3
June	0.95	81.7	75.7	83.6	72.3
July	1.48	81.3	75.8	83.1	72.8
August	3.29	82.1	76.1	84.5	73.0
September	9.08	81.7	75.7	84.0	71.3
October	0.86	83.6	75.7	88.7	72.8
November	3.62	86.1	75.3	88.8	72.8
December	15.11	85.9	76.1	89.1	73.2
Total :	109.92				

Total Rainfall in 1955 at Recording Stations

Mahé, Victoria	109.92 inches	(at Meteorological Station).
Mahé, Mont D'or	125.05 do	(at 1,000 feet above sea level)
Mahé, Grand'Anse	124.28 do	(sea level)
Praslin	99.75 do	(sea level)
La Digue	77.40 do	(sea level)

SECTION I.

Agriculture, Fisheries and Forestry in the Colony

A. CROP HUSBANDRY

1. COCONUTS

Production of copra for export fell below 6,000 tons for the first time for many years, the figure being based, as usual, on deliveries to the export sheds. The fall in tonnage, expressed as a percentage of average production during the preceding 5 years amounted to approximately 8%. Apart from the effects of pest control work and improved husbandry by a very limited number of estates, there are few reasons for expecting average production for export to rise. Nearly all suitable land for coconuts has long been planted and many plantations have passed their period of maximum yield. Plantations maintained by the inter-planting of replacements cannot be expected to yield as well as did the original plantings at the height of their vigour. Coconuts being a local food and a source of oil and soap for local consumption the increase in population has its inevitable effect on the tonnage of copra for export. It is clear from certain estate production records that weather conditions did, however, play a part in 1955. The previous year was abnormally dry, damage due to the February gales of 1955 was considerable, and 1954 crops were heavy.

Production for export, and actual export, 1951 — 55

Year	Production (metric tons)	Value f. o. b. (Rupees)	Export (metric tons)	Value f. o. b. (Rupees)
1951	6,574	7,435,954	7,560	8,326,730
1952	6,210	4,890,335	4,980	4,074,915
1953	6,054	6,025,730	7,398	7,015,504
1954	6,472	6,579,419	5,883	6,024,205
1955	5,846	4,730,530	6,313	5,190,018

As previously, copra for export was sold by the Seychelles Copra Association. Prices realised were from £56.12.3 to £61.16.0 per ton f.o.b., the average being £60.10.5 compared with £76 4 0 in 1954. The local selling price for copra in Victoria ranged from Rs. 666 to Rs. 700 per ton.

Cesses and duties were as before : Association cess Rs. 2 per ton, Price Stabilisation Fund cess 6% on f.o.b. value, Export Duty 3% on f.o.b. value. The last applied to coconuts and oil in addition to copra.

Three local merchants bought from the Association and all exports were to India.

Removal of the subsidy on coconut oil production and the raising of the controlled price of oil to a figure corresponding with the price of copra resulted in both oil and poonac being in good supply, and the fall in the copra market resulted in the new prices differing little from those prevailing during the period of subsidy. The small privately-owned power operated mills supplied all local requirements and could, indeed, have milled a considerably larger tonnage if required. The oil out-turned by these mills suits the taste of the majority and the poonac is greatly superior to that from the old wooden animal-powered mills. The Government expeller remained on a care-and-maintenance basis. Some five tons of oil were exported. Production of mottled blue laundry soap was as usual, imported soaps being used only by the sophisticated minority. One soap-maker, perhaps with a view to a future export trade, was at work on developing carbollic and scented toilet soaps for local sale.

No sizable developments in the small local coir industry can be reported. One factory is diesel-powered, the other relying on a water-wheel. The latter received a new lease of life when its enterprising owner returned from East Africa recently. Brush fibre production or even brush manufacture are possibilities and hand-spun twine for U. K. matting manufacturers might also be produced. Though some husks are used as fuel the majority are left heaped throughout the plantations and transport of such low-value raw material to coir factories is often uneconomic.

Neither dessicated coconut nor that surprising commodity canned coconut meat are produced locally.

References to the work of the Department in connection with the coconut industry will be found in Section II.

2. CINNAMON

As in 1952, there was a sharp fall in the price of cinnamon leaf oil. Towards the end of the year exporters were holding stocks in the hope of a rise in the market. Similar falls in price occurred in the past, e. g. in 1937 and 1948, the former coinciding with the first appearance on the market of lignin vanillin. Though the import of the latter to the United Kingdom (from dollar sources) is said to have increased in 1955 there is no firm indication that the fall in price of Seychelles oil is due either partially or entirely to such imports. The heavy production of oil in 1953 and

1954 (close on 100 tons per year compared with long-term average of 60 tons) may have its effect on markets since there is a tendency for manufacturers to maintain a fairly constant intake of oil of one origin. Local prices ranged from Rs. 9 to Rs. 15 per kilogramme, as compared with Rs. 11.50 to Rs. 16.20 in 1954.

Although local prices for cinnamon bark were lower in 1955 than in 1954 (Rs. 200 to Rs. 350 per ton, as compared with (Rs. 300 to Rs. 400) production for export remained brisk during the early part of the year. Towards the end of the year, however, the combination of high freight rates and no improvement in prices overseas brought the local price down to a figure which, it is claimed by many producers, is uneconomic. One producer received higher prices for a grade of bark (superior to the normal quality) which is prepared by scraping off and discarding the outer layers and which is also kiln-dried instead of being dried in the usual primitive fashion on rocky outcrops. One producer started the preparation of quills, his produce resembling the London Market Grade "O".

There was no local commercial distillation of cinnamon bark during the year.

Reference to the work of the Department in connection with the cinnamon industry will be found in Section II.

Cinnamon leaf oil exports 1951—55

<i>Year</i>	<i>Quantity in kgs.</i>	<i>Value in Rupees f.o.b</i>
1951	99,332	2,211,774
1952	69,127	1,201,298
1953	99,296	1,045,989
1954	99,225	1,388,294
1955	84,672	910,997

Cinnamon bark exports, 1951 — 55

<i>Year.</i>	<i>Quantity (Metric tons)</i>	<i>Value in Rupees f.o.b.</i>
1951	207	76,275
1952	143	61,327
1953	516	201,248
1954	475	217,433
1955	415	167,667

3. PATCHOULI

Interest in Patchouli declined during the year. However, there is ample stock in the Colony and production can be increased at any time. Each rupee per kilogramme paid for dry leaf represents a raw-material cost of about 15 shillings per pound of oil at the usual average yield. Allowing for distillation, container, and shipping costs, leaf must be obtainable from growers at a figure in the region of Rs. 2 per kilogramme for Seychelles distilled oil to be competitive with the far-eastern product on the London market at present prices. Growers lose interest at such prices.

Competition from the far-east first became severe in 1936 but the war, subsequent disturbances, and new uses for the oil, postponed the full impact. Seychelles Standard Quality oil has a good reputation, but it has been stated that Malayan leaf yields an oil more favoured on the market than Seychelles oil, whether the latter is produced in Seychelles or by overseas distillers. A still higher standard of quality for Seychelles oil, achieved by use of the Malay strain, may be the answer to competition.

Previous reports have not shown clearly the trend of total patchouli exports so an additional table is included showing the "oil equivalent", i. e. the assumed oil content of leaf exports added to the actual oil exports.

Exports of Patchouli leaf and oil 1951 — 55

Year	Oil Exports.		Leaf Exports.	
	Kilogrammes.	Rupees (f.o.b.).	Tons.	Rupees (f.o.b.).
1951	2,286	332,299	12	—
1952	2,718	187,318	40	73,971
1953	2,016	114,107	53	—
1954	273	18,514	67	270,666
1955	436	34,491	38	141,200

Exports of Patchouli (expressed as oil) 1949 — 55

Year	"Oil Equivalent" of year's exports (see text)			
1949	1,664 kg. (No record of leaf exports)			
1950	4,616 kg. (" " " " " ")			
1951	2,886 kg. (includes 12 tons leaf)			
1952	4,743 kg.	"	40½ "	"
1953	4,656 kg.	"	53 "	"
1954	3,623 kg.	"	67 "	"
1955	2,336 kg.	"	38 "	"

4. VANILLA.

Owing to unfavourable conditions during the 1954 flowering period the 1955 vanilla crop was small, but prospects for the 1956 crop are good. The local selling price for cured "beans" ranged from Rs. 10 to Rs. 30 per kilogramme, the discrepancy between merchants' buying and selling prices remaining unduly high. The bulk of the crop went to the United Kingdom, but small quantities were shipped to the United States, Germany, South Africa and Hong Kong.

Exports 1951 — 55

Year	Quantity	Values
	Kg.	Rs.
1951	484	8,987
1952	5,927	79,550
1953	5,642	133,800
1954	1,370	62,000
1955	522	16,380

5. OTHER CROPS.

The usual variety and volume of "other crops" was dealt with at some length in the 1954 Report, though one familiar crop well suited to good or improved soils was omitted from the list, this being sugarcane. A few clumps of cane are permitted without permission, but larger areas require a permit owing to the legal restrictions covering the production of fermented cane-juice. The terrain being generally unsuited to mechanisation the cultivation of cane for sugar production (for export) is generally agreed to be out of the question. Rum was attempted in the past but no progress was made. Jaggery could be made for local consumption but at present virtually all cane is crushed for sale, under Government supervision, of fermented cane juice ("Bacca").

There were no important changes in 1955 as regards "other crops". Interest was concentrated on coconuts and cinnamon. The long dry spell was unfavourable for most crops.

Reference to the work of the Department in connection with "other crops" will be found in Section II.

B. ANIMAL HUSBANDRY.

1. CATTLE.

Slaughter continued at a higher rate than prior to 1954, the return of Royal Pioneer Corps personnel with an acquired taste for beef and, temporarily, the means to satisfy it probably accelerating the demand for a "fatted calf". As Government-raised cull stock intended for slaughter is sold at auction and there have been no indications of unwarranted slaughter of Government-raised breeding stock there would seem to be no justification for direct interference with the current trend, regrettable though it is so far as maintenance of soil fertility is concerned. As the amount of money in circulation tends to decline the advantages of converting grass and poonac into milk and beef and manure will be appreciated more forcibly. The number of Friesian X Sindhi stock in private ownership increased, and the good milk yield and thrifty characteristics of this cross are appreciated. No epidemics occurred during the year, but cattle fly (*Siphona exigua* de Meij.?) was prevalent. Reference to the work of the Department will be found in Section II.

2. PIGS.

Most estates, large and small, and many labourers, keep a few pigs. Where no gardens exist, or where these are fenced, the animals often range freely but in most areas pigs are usually kept in small and primitive styres or even tethered by the leg. Breadfruit, scraps from the copra drier, poonac, and, very occasionally, imported maize meal or bran make up their ration. Little systematic use is made of pig manure from penned animals.

Some of the more enlightened estate owners take a pride in upgrading their stock of pigs, but in-bred animals (stunted, giving small litters) are all too common and continued importation of new stock by the Department is clearly necessary. No epidemics occurred. Reference to the work of the Department will be found in Section II.

3. POULTRY.

There are no developments, epidemics, or serious losses to report. Reference to the work of the Department will be found in Section II.

4. OTHER STOCK.

A few donkeys, goats, sheep, horses, pigeons, guinea-pigs and rabbits are kept. There were no epidemics or serious losses among these or among the large population of dogs and cats.

5. ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS (SEYCHELLES BRANCH).

This branch was formed in 1954 and was active during 1955. Among its immediate objects were the provision of humane killers to country districts, amendments to the law, the provision of improved facilities for sick dogs at the Department's Veterinary Station, &c.,. Fortunately active cruelty to animals is rare in the Colony but, as in all countries,

culpable negligence does occur and the establishment of a branch of the R. S. P. C. A. is to be welcomed. It is with deep regret that the death of the founder, Brig.-Gen. Dodd, must be recorded.

C. FISHERIES AND SUNDRY PRODUCE

1. FISH.

There is no doubt that it is the availability of fish which depresses animal husbandry in the Colony. Pig keeping, in particular, is ideally suited to the prevailing conditions and would undoubtedly be far more popular if it were not for the large quantities of fish which are usually available. This is by no means an argument in favour of "more pigs and less fish", it leads, rather, to the inescapable conclusion that the Colony could safely export much more processed fish, even if this results in some lessening of the supply of fish on the local market, since the deficiency in protein food could be made up by an increase in animal husbandry. Any sudden swing in such a direction would of course result in hardship, and in resentment against fish exporters.

Due largely to the enterprise of the owner of the Cold Store, the new tenant of the Aldabra Group (Crown islands on long lease), and owners of private islands, both the tonnage and value of dried fish exports was the highest since 1952. New markets were explored, new packs were tried, and the ex-C. D. C. fish driers (scarcely used since 1952) were at times fully employed. Shark and ray made up a large part of the exports, but profitable outlets for dry salted fish of species normally caught for local consumption were also found.

Any really large expansion of fish exports must, however, be independent of the heavily fished non-migratory species from the vicinity of Mahé, Praslin and La Digue, though increased fishing of these species in Aldabra and other distant waters can make a considerable contribution to exports without affecting the fish supplies of the main islands. The Cold Store share-fishing organisation (employing three motor boats and planning to increase to five) did, to some extent, rely on locally caught non-migratory fish.

Towards the end of the year modern, fast, 400-ton Japanese tunny-fishing vessels were operating off the Amirantes, Coetivy, and elsewhere. Twenty-seven of these vessels, stated to belong to four different private-enterprise fishing companies, have been reported. One vessel was visited prior to writing this report. The 1,900-hook flag-line was stated to be giving an average 20% catch in areas selected by current-chart, plankton-count, and echo-sounder in the Cocos, Ceylon, Seychelles, and other areas. Refrigerated whole bait-fish averaging 9" in length were stated to be from Japanese waters and used also for pre-baiting fishing grounds. The flag-line employed glass floats fitted with electric lights counter-balanced by underwater water-tight battery boxes. The catch of around 200 tons of, almost exclusively, yellow-fin tunny is quick-frozen and stowed in refrigerated holds. The outlet is stated to be the Japanese fresh-fish market and canning trade. A mother ship is stated to be operating but this was not seen. Its function, it is said, is to provide additional refrigerated storage. Some shark are caught as a minor activity, only livers and fins being retained. Such apparently highly successful Japanese private enterprise indicates that despite the Colonial Development Corporation's unsuccessful attempt to develop an export fish industry a very large tonnage of valuable migratory fish can, with the right methods and expert knowledge, be caught in these waters. As there is no known large outlet for fresh tunny in this area doubtless the bulk of such catches would be canned, should a sufficiently capitalised enterprise be interested in developing tunny fishing.

Export of dry salted fish (including shark) 1951 – 55

<i>Year.</i>	<i>Metric tons.</i>	<i>f.o.b. value (Rupees)</i>
1951	142	32,415
1952	194	131,435
1953	95	49,383
1954	86	65,190
1955	186	154,919

2. GREEN TURTLES

Some authorities state that the green turtle comes to Seychelles waters solely for the purpose of breeding, adults and young then leaving for distant feeding grounds. The species has been almost exterminated by man in the northern islands of the Colony and occasional specimens have a very small chance of survival despite elaborate legislation designed to conserve. In the Aldabra group turtles are still to be found in considerable numbers. Here again, legislation and terms of lease are designed to restrict exploitation but there is little doubt that the population is declining. Turtle products have a high value on world markets and so far as the Colony's overall economy is concerned it would seem that a high degree of local processing (of restricted numbers) is desirable. Such a development might price turtle meat out of the local market.

Calipee exports were back to the average of recent years (apart from 1954) and a new item on the export list was dry salted turtle meat.

Export of Green Turtle products

	<i>Quantity.</i>	<i>Value f.o.b.</i>
Calipee	2,246 kgs.	Rs. 41,996
Dry salted meat	1,019 kgs.	21,200

3. SUNDRY PRODUCE

Under this head are grouped most of the miscellaneous products of the Colony not classified elsewhere. These include tortoise-shell, bird guano, phosphatic rock, sea shells, sharks fins, giant tortoises and coco-de-mer. This list is not exhaustive as it excludes such occasional items as sales by ship's victuallers and, only remotely the concern of this Department, locally built boats and locally made hats, handbags, and curios produced for export.

Sales of guano and phosphatic rock showed a serious fall, and there was some reduction in sale of shark fins. Export of coco-de-mer was much as usual. Sea shells (chiefly green sea snails) appear on the export list for the first time for some years and proved profitable. The figure quoted is believed to be lower than the value of total shell exports from Seychelles waters. The exports of giant tortoises would seem to have reached a higher level than is desirable in the interests of conserving these reptiles. Tortoiseshell (from the Hawksbill Turtle) fetched low prices.

Record Exports of certain Produce

	<i>Quantity</i>	<i>Declared Value f.o.b.</i>
Guano and phosphatic rock	798 tons	Rs. 28,920
Sharks fins	2,869 kgs.	4,312
Coco de Mer nuts	1,070 nuts.	2,266
Sea shells	Not stated	3,282
Tortoise shell	334 kgs.	2,741
Giant Tortoises	60 tortoises	3,515

D. FORESTRY.

There are no developments of consequence to report regarding forestry on private estates which is largely a matter of timber and forest trees growing among coconuts and cinnamon. A very few estates have deliberate plantations and these are usually of *Casuarina equisetifolia* for fuel. As usual, Albizzia for soft wood planks was in ample supply, this species growing with a rapidity which is truly astounding.

Some naturally regenerated Capucin were seen at a high altitude on Silhouette Island, probably the last remaining environment where this can occur. The owners of the island are fully aware of the importance of conserving the upland forests.

E. PESTS, DISEASES AND VERMIN.

The work of the Department is referred to in Section II. The following is a brief mention of the major crops and economic animals and the pests, diseases, and vermin which attack them.

Coconuts : Scale insects remain under adequate biological control. *Melittomma insulare* was not reported to have spread to any hitherto uninfested islands but remains the major pest of the crop on nearly all granitic islands, with La Digue the outstanding exception.

Oryctes monoceros continues to cause loss of many newly planted coconut palms and occasional collapse of mature palms due to rots following bud damage. It is interesting that the pest never breeds in heaps of rotting coconut husk, while it does so readily in almost any other rotting organic matter. Rats continue to take their toll of immature nuts from many, but by no means all, trees.

Cinnamon : No pests, diseases, or vermin are known to be of economic importance.

Patchouli : As above.

Vanilla : A complex of root disease and leaf lichens occurs where the crop is grown in unsuitable environments. The Seychelles Black-bird (*Ixocincla crassirostris*, Newton), locally known as the "Merle" causes damage to vanilla flowers in La Digue.

Breadfruit : No pests, diseases, or vermin are known to be of economic importance.

Bananas : *Cosmopolites sordidus* occurs but is not of great importance.

Manioc : Mosaic occurs but with adequate fertility and some selection of planting material need not be serious.

Sweet Potato : Neither virus diseases nor weevil have been seen. Rats occasionally cause some loss.

Local Spinaches : The most popular local spinaches appear to have no serious enemies.

Other Tropical food-crops and fruits : No serious troubles have been observed, though scales, mealy-bugs and eel-worm cause some slight damage to several and both Indian Mynas (*Acridotheres tristis*, Linn.) and fruit bats are often damaging to fruit crops.

Temperate-climate food-crops and fruits : Pests and diseases are, as might be expected, a serious problem. Tomatoes suffer from a complex of troubles including *Cladosporium fulvum*, fungal wilts, and root-knot eelworm. Cabbages and chinese cabbages, ladies fingers, and others crops are badly attacked by caterpillar. Egg-plants suffer from wilt, but grafting on a resistant local solanum is a remedy. Carrots and beet are susceptible to root-knot eel-worm. Citrus, often clearly suffering from the

adverse environment, are attacked by scale and mealy bug and, in recent years, by *Aleurocanthus woglumi*, which continued to spread rapidly in 1955 and caused much concern.

Economic Animals : Buffalo Fly (variously identified as a *Lyperosia* or *Siphona* species) continued to cause loss of condition in cattle. Frigate birds caused losses of young turtles at Aldabra. Internal and/or external parasites attacked most farm animals. The Colony remained free from all major epidemic animal diseases, though both fowlpox and bovine tuberculosis occur.

Forest trees : Apart from examples of introduced species suffering insect attack no serious troubles are experienced.

General : Giant Snails, rats, tungracs, termites, and timber-borers are catholic in their tastes and cause much damage. Fortunately Giant Snails (a garden pest) can be completely controlled by metaldehyde baiting and ways and means of minimising the damage caused by the others mentioned are known.

SECTION II

The Work of the Department of Agriculture

Work which is considered essential in this small Colony comprises :

- (a) Re-afforestation and forest maintenance.
- (b) The up-grading of livestock.
- (c) The control of export quality of produce.
- (d) The carrying out of simple trials and the setting up of demonstrations.
- (e) The provision of services and supplies which cannot be provided by private enterprise.
- (f) The provision of information and advice to Government and public.
- (g) The supervision of leased, and temporarily unleased, Crown lands.

It is opportune to review the extent to which this work is being engaged in and, equally important, the extent to which other, unessential, work is still being carried on.

(a) *Re-afforestation and forest maintenance* : Under a C. D. & W. Scheme re-afforestation (and maintenance) of a considerable area of Crown Land is proceeding satisfactorily. Considerable areas of upland secondary forest and scrub (purchased to preserve water catchments, with a view to re-afforestation, or for other reasons) are patrolled and workable timber and cinnamon is exploited directly or by tenderers. No unessential work is being undertaken and no additional work is suggested.

(b) *The up-grading of livestock* : Under a C. D. & W. Scheme just ended importations of Sindhi and Friesian cattle, and later of pigs and poultry, were made. Up-grading work is associated with a Government dairy at Union Vale, an activity which from the Department's point of view is unessential. Any up-grading work would always involve some milk sales in this Colony as the stationing of stud animals is often less effective than the sale of young stock, but the present arrangement involves much unessential work, the stopping of which would permit more efficient up-grading of private stock.

(c) *The control of export quality of produce* : All work at present being undertaken is considered essential and some expansion may be desirable.

(d) *The carrying out of simple trials and the setting up of demonstrations* : For the last sixteen years reliance was placed on the Government-managed "Grand'Anse Estates" organisation for trials and demonstrations but pressure on this to operate at a profit resulted in no useful trials or demonstrations in recent years apart from some very minor activities. No unessential work, and indeed insufficient essential work, is being done. When unessentials referred to in (b) to (g) are reduced greater attention can be paid to these important activities — if funds are made available.

(e) *The provision of services and supplies which cannot be provided by private enterprise* : The services of a semi-trained livestock officer, working from a clinic, and the supply of certain seeds, insecticides, &c., are justified in view of local conditions, as are the livestock up-grading activities already referred to. Some other activities of the Department, however, were more public conveniences than necessary services. Several of these have been abolished in the last two years but several remain, including a retail list of produce which could be drastically cut, Victoria's main milk supply (previously referred to), and, least essential and most hampering of all, the operation of large estates.

Border-line cases are the so-called "Pilot" scheme for Melittomma control in Praslin — which can be justified on the grounds that the work would not be done if reliance was placed on demonstration and legal measures, and the cultivation of sugar-cane for the Government Bacca Clubs — which can be justified on the grounds that the Clubs are considered essential (not by the Department of Agriculture) and the cane would not be forthcoming unless grown by the Department.

(f) *The provision of information and advice to Government and the public* : This is, of course, the reason for having technically trained officers of some experience in the Colony — all the activities which are administered by them should be subsidiary. With present activities employing a labour force of close on 600 and a staff of some 50 engaged in their supervision and in the relevant clerical work the burden of administration, under the conditions prevailing in the Colony, absorbs an undue amount of time. Only by substantial reductions in the labour force and the lower levels of the supervisory staff can the situation be righted.

(g) *The supervision of leased and temporarily unleased Crown Lands* : Owing to the conditions prevailing in the Colony the supervision of leased Crown Lands is peculiarly onerous and could absorb a large part of the time of a completely disinterested senior officer. There is a long history of leased Crown Lands deteriorating, being "stripped to the bone" &c., yet the enforcement of terms of lease bristles with legal difficulties and cancellation of a lease for non-compliance is almost unheard of so far as the larger leases are concerned. There is much to be done.

Summing up, it can be said that the Department is a typical example of one which, under pressure or out of a desire to meet requests, has grown out of all proportion to the size of the Colony and gone much too far from the day of the worthy Mr. C. Button (Conservator of Crown Lands and Forests in 1883) whose annual expenditure amounted to Rs. 2,412. The remedy is not more Departmental revenue, it is fewer revenue-earning activities. As the possible margin of profit on estate operation fails, as fall it undoubtedly will, this fact will become more and more obvious.

1. FORESTRY DIVISION

1955 proved to be the most difficult year, climatically, since the start of the Reafforestation Scheme. In January there were 37 inches of rain and very strong winds. Early in February a further long spell of wind and rain resulted in extensive wind damage. The sodden soil offered poor anchorage to trees growing on exposed sites and wind blown trees of all ages and species were reported throughout the Colony. In direct contrast the S. E. Monsoon, which began to blow earlier than usual and blew almost incessantly throughout its season, was accompanied by a severe drought which in many areas continued almost unbroken from late May to September.

Many acres of newly planted 1945 stock succumbed and a severe check developed in plantations on exposed ridges. The resultant heavy "beat-up" which became necessary upon the eventual arrival of suitable planting weather made the original target acreage an impossible one with the result that the total area of successfully established plantations for 1955 amounted to only 254½ acres. This figure brings the total area completed since the start of the scheme to 1759 acres.

Two bushfires occurred on Crownlands during the year, the largest resulting in the loss of 15 acres of scrub forest and approximately four acres of young plantations which bordered the area. This was the first direct loss of established reafforestation stock to result from bushfires. The whole of the burnt area was sown at stake, but due to the drought, which persisted for many weeks after the fire, germination was poor and the area had to be re-sown later in the year.

Sylviculture

Losses of 1955 stock planted out up to the start of the drought were considerable by the end of the S. E. Monsoon and approximately 6% of plantations so formed were found to be in need of a heavy beat-up. In two cases, mortalities on exposed low fertility lateritic sites exceeded 70% in spite of surface mulches. Thus, with the coming of the first substantial rains in mid-September an extensive beat-up was needed to repair the ravages of the drought before any further extension of planting acreage could be considered. This, in addition to restricting work on new plantations, considerably depleted the nursery and seed stocks that had been reserved for them.

In the main, despite the weather, the check on growth of the older established plantations did not prove to be as serious as anticipated and growth throughout, except on the poorest sites, has been quite satisfactory and uniform.

Direct sowing accounted for more acreage in 1955 than any other year and approximately one third of 1955 plantations were by this method. This high percentage was not wholly intentional but was largely due to the weather leading to a shortage of nursery stock toward the latter part of the year. The results obtained to-date from small scale direct sowing trials have been varied, but experience suggests that Takamaka (*Calophyllum inophyllum*) and Santol (*Sandoricum indicum*) when sown under optimum conditions may be relied upon.

Trials Species

Both *Cedrella odorata* and *mexicana* continue to support their earlier promise of success, the tallest specimens now showing a height growth of 48 ft. x 25" G. B. H. at 2 years 8 months and 47 ft. x 18" G. B. H. at 2 years and 2 months respectively.

During the S. E. Monsoon an example of natural biological control occurred on *Cedrella*. An unidentified black scale spread rapidly in a plantation of *C. Odorata*, chiefly on the main stems. 60% of the trees were attacked, those where infestation was heavy showing pronounced yellowing of foliage. One of the Colony's several *Coccinellidae* then got to work and bred rapidly, the larvae occurring in large tightly packed clusters. Before the drought broke the scale attack had been effectively controlled by the predators and the vigour of the trees had improved noticeably. Specimens of *C. mexicana* a mile and a half away from the original area of attack were found infested with the scale in December and adult *Coccinellidae* transferred to them started to breed.

Swietenia mahagoni and *macrophylla* have shown steady growth since planted, the best specimens measuring 20 ft. x 14" G. B. H. at 3 years 9 months and 30 ft. x 9" G. B. H. at 3 years 2 months respectively. As will be observed from the measurements *Swietenia macrophylla* has taken the lead in height growth though lacking somewhat in girth. The stemform of *Swietenia macrophylla* leaves little to be desired at present from a silvicultural point of view and is decidedly superior to that of *Swietenia mahagoni* throughout.

Melia dubia when given optimum requirements is without doubt our fastest growing species at present, and has almost unfailingly given first year growth in excess of 22 ft. when planted on a good site. The largest specimen we have was planted in November, 1952 and now measures 51 ft. x 23" G. B. H.

Melia dubia is, however, proving to be a more discriminating species than hitherto believed and specimens planted on any but good sites are pronouncedly slower and less vigorous in general. During 1955, a small and fortunately isolated stand of this species, (which has hitherto enjoyed immunity from pests and diseases once past the "snail girdling" stage), suffered a severe attack by shot borers, as yet unidentified. This attack resulted in almost every specimen in that particular stand developing badly deformed and contorted crowns, while several specimens died. The attacked stand was approximately 18 months of age and though the site was inclined to be wet the trees appeared to be quite healthy prior to the attack. All the affected specimens were felled and burnt. A stand of 3 years old specimens in the vicinity (approximately $\frac{3}{4}$ mile) remained unaffected, which tends to suggest the site of the attacked trees may have been a contributory factor.

Grevillea robusta

The results obtained from this species over a wide range of sites tend to indicate at this stage that *Grevillea robusta* is the most accommodating introduction to-date. It has made satisfactory to excellent progress, according to the quality of the site, since being planted out. On some of the poorer sites the scattered trial specimens may be readily discerned, being two or three feet taller than their companion species. The tallest specimen to-date is 18 ft. x 8" G. B. H., age 21 months.

Acrocarpus fraxinifolius

This species has maintained good progress on favourable sites and the tallest specimen to-date measures 28 ft. 16" G. H. B. at 2 years 8 months. It is proving to be a rather exacting species and it is unlikely that it will prove suitable for any large scale planting in the future, but it may prove suitable for establishing in small stands on carefully chosen sites.

Chukrassia tabularis

This species has proved to be considerably slower than those previously mentioned but it appears to be firmly established and has, in general, a robust and healthy appearance. Best specimen to-date measures 18 ft. x 8" G. H. B. at 2 years 9 months.

Ochroma lagopus

Results from this species do not indicate at present that it is likely to be a very useful introduction. Almost without exception the stemform leaves much to be desired, showing a pronounced tendency to fork at a relatively low height and the development of a heavily branched crown. The best specimen to-date measures 21 ft. x 15" G. H. B. at 3 years.

Cryptomeria japonica

The drought appeared to have a marked effect on this species and a temporary slight yellowing was observed on some specimens. Growth has been slow but steady and the majority of specimens are of good appearance and carry a healthy bloom. Tallest specimen measures 16 ft. x 10" G. H. B. at 3 years 4 months.

Tectona grandis

In general, trials with this species are tending to be disappointing due mainly to its rather exacting nature. On only a few sites does it continue to flourish, but where conditions are suitable it is growing quite well. The best specimen to-date measures 35 ft. x 13" G. B. H. at 4 years approximately.

Khaya Sp. p.

A small quantity of seeds of *Khaya nyassica*, *Khaya anthotheca* and *Khaya senegalensis* were obtained from Tanganyika Forest Department towards the end of the year. Only the seeds of *Khaya nyassica* germinated well, viability being in the region of 60%, the seedlings appearing quite healthy. *Khaya senegalensis* produced a few seedlings but viability was poor. *Khaya anthotheca* failed to germinate.

Selective Herbicide Trial.

During May a weed control trial was carried out with "Tecane" on a plot of thick gazontraille — (*Panicum parvifolium*) 48 ft. x 48 ft. One half of the plot was given a single application at the rate of 2½ lbs. Tecane per 5 gallons water. The remaining half received two applications at the rate of 1½ lbs. per 5 gallons of water with a period of fourteen days between applications. All applications were applied by a Knapsack sprayer. The rate in each case was 50 lbs. of Tecane per acre.

Both the single and the double applications had the desired effect and within a few days the gazontraille had died.

Several plants of "Mange-Tout" *Asystasia coromandeliana* which had been struggling to exist amongst the gazontraille remained relatively unaffected save for a yellowing that soon passed off. *Cinnamomum zeylanicum* and *Chrysobalanus icaco* growing alongside the trial plots were affected by spray-drift and showed a marked browning of their leaves which took four to five weeks to pass off.

By the end of December, the gazontraille had not recovered though "Mange-Tout" was growing vigorously. The dead *P. parvifolium* formed a mulch over the land.

This preliminary trial has indicated that practical control over *P. parvifolium* may be obtained with "Tecane" but whether a herbicide can ever be used more cheaply than hand labour in forestry work here is a matter for further trial.

A trial of Vanilla :

Vanilla as a forest catch crop was tried with a view to utilising young plantations that have closed canopy — as supports on which the vanilla vines may grow. The density of shade and even distribution of stems in such plantations would appear to favour such trials.

The potentialities of such a catch crop would seem to be considerable. Vanilla has no harmful effect on the supporting trees and allows for continued normal forest management.

It has been estimated that 1,000 acres of Vanilla vines at 900 per acre if producing only one half of the normal average yield would, at the prevailing market price, have a potential market value well exceeding Rs. 1,000,000 per crop.

The current trials cover the planting of vanilla in groups of 50 over a variety of potential sites and species, with a view to ascertaining the ideal combination of site and species required to provide optimum cultural conditions for vanilla, also the degree of suitability each species offers by way of its bark texture and the degree of shade it affords.

Formerly, vanilla was widely grown in Mahe but was almost entirely abandoned as a result of root disease. It remains to be seen whether the trouble will occur again. A high state of fertility, correct shading, and adequate drainage are the only known methods of combatting the disease.

Trial of Aerial Wireway :

Trials were carried out at Le Niol Forest to establish the practicability of using a light galvanised mild steel wire (No. 6 gauge) for a light-load aerial wireway with which to extract forest produce over difficult terrain.

The distance covered from point to point was restricted to $\frac{1}{4}$ mile, to avoid undue sag and strain on the wire. Loads were tried ranging from 60 lbs. to 150 lbs., these tests indicating that a load of approximately 85 — 100 lbs. could be used safely and without excessive bellying in the wire.

The rate of descent of the loads was controlled in the first instance by a light line, leading from a permanently positioned drum or spool, fastened to the load. The rate of descent was controlled by breaking the revolutions of the drum as the line unwound. In addition to controlling the rate of descent, this line allowed for the recovery of the pulleys on which the load was suspended. By winding the drum by hand in the opposite direction the line was rewound and returned the attached pulleys to the loading platform.

This method worked well, but the time taken to recover the pulleys was considered too long — $2\frac{1}{2}$ minutes each load, and further trials were directed towards constructing a dual parallel wireway which provided for the descending load automatically returning the pulleys of the previous load to the loading platform. This was achieved quite simply and very effectively by leading one recovery line clockwise onto the drum, now divided into two compartments, and the other line anti-clockwise — thus as one load descended and unwound the recovery line the line in the adjoining compartment was re-wound. The rate of descent and ascent was easily controlled by a simple brake on the drum.

By this method some twenty-seven thousand feet of posts, planks, and madriers, as well as many sacks of charcoal and other sundry forest produce, have been transported to the roadside with a material saving of time and transport costs.

The advantages of the system are : (1) that it is relatively portable and can be assembled within a day by four men where conditions are favourable. (2) it is simple to operate and other than adequate main-

tenance of the recovery line and pulleys, requires little attention. (3) The dual wires allow for the transport of a load up to twice the weight of a single-wire load if the need arises, as the extra weight may be distributed over four pulleys and shared by both wires at once.

For the conveyance of light materials down steep slopes this system has much to commend it and may possibly be of interest to planters who have bags of cinnamon, firewood, charcoal and such like requiring to be transported regularly over steep or difficult terrain.

Praslin Crown Lands.

Newcome Forest continued throughout the year on a care and maintenance basis and despite the unfavourable weather which prevailed for long periods, growth has been commendably uniform and results from this area as a whole have been most satisfactory with the exception of Bois Noir (*Albizia lebbek*) which appears to have gone into check. Fortunately the plantation containing Bois Noir is a mixed one and should this species fail the area will not need replanting.

Takamaka (*Callophyllum inophyllum*) has given excellent results to-date and would appear to have potentialities as a species suitable for the re-afforestation of some of the less eroded bare hills to be found on Government Crownlands in Praslin.

Chrysobalanus icaco (Coco-plum) colonisation pits have given most encouraging results to-date, germination under this method being noticeably improved. More of these pits will be established in 1956 and similar trials (using Takamaka seeds) will be made on hillsides above the boundaries of existing plantations, but well below the eroded summits, in an attempt to ascertain whether the range of Takamaka might possibly be increased up the hill and so occupy the lower slopes of what is at present designated "Coco plum" terrain. The small trial plot of *Swietenia mahagoni* continues to progress most favourably and better results from such a mediocre site would be hard to imagine.

The restocking of the Vallée de Mai with Coco-de-mer is virtually complete, there remaining but a few exotic species to be removed and the blanks filled with Coco-de-mer. Germination of the indigenous palm species which have been widely sown, together with Coco-de-mer, throughout the area is visible everywhere, which promises an early reversion to a mainly palm species forest. Since removing most of the exotic species from this valley it has been observed that the Coco-de-mer inflorescences are setting better and larger average clusters of fruits than hitherto. This may well be due to the freer circulation of air and the consequent wider and less obstructed distribution of pollen following the removal of the very numerous exotics.

The establishment of an amenity belt of flowering trees and shrubs encircling the upper rim of the Vallée de Mai has made steady progress and now extends along approximately one fifth of the perimeter.

Ornithologists may be pleased to note that the cleaning of Vallée de Mai does not appear to have adversely affected the Black Parrot population, indeed, the reverse seems to have happened as these rare birds may be seen more frequently than hitherto and apparently in increasing numbers.

Fires.

Two fires occurred on Government Crownlands during 1955. The most serious of these occurred on Sunday 3rd. of July, during a period when fire hazard was very high. This fire was first discovered at 12.00 hours in the vicinity of La Mission and was spreading rapidly on a wide front fanned by a strong S. E. wind. A general alarm was given and the

Senior Ranger proceeded at once to the fire with the entire male labour force available from Gen-Mo-Sion Village Settlement. During the afternoon strong re-inforcements arrived from Le Niol and Grand'Anse Forests and by 17.30 hours the fire was brought under control.

A detachment of prisoners arrived to take over night patrols and by the morning of the 4th. July only a few smouldering stumps remained to be dealt with. A final assessment of the area showed approximately 15 acres burned — four of which were established plantations of two years growth, the remainder being low grade scrub forest. This was the first occasion on which the Re-afforestation Scheme has suffered direct danger by bushfires.

The cause of the fire is unknown and it is felt that due to the wide front it had developed when still relatively young arson cannot be completely ruled out.

The second fire occurred a week later in the region of Sans-Soucis where Government Crownlands adjoin the Foret Noire footpath. This fire was quickly detected and extinguished before a quarter of an acre had been burned by the prompt action of the police and Senior Forest Ranger. It is believed to have been started by a burning match or cigarette end carelessly thrown from the public footpath.

Vandalism.

It is regrettable to have to record that several instance of vandalism occurred during the year, a total of some four hundred young trees of various ages having been noted to have been broken, slashed down, or uprooted. In one instance more than fifty 2-year trees were uprooted. It is believed that youths who had been refused permission to shoot birds with air-rifles and catapults on Crown Land were responsible for most of these outrages.

Staff.

The Forester, Mr. Brewer, was in charge throughout the year and was assisted by a Senior Forest Ranger and two Forest Rangers. It is with deep regret that the death of Mr. Albert Victor, overseer at Newcombe, must be recorded.

Acreeages and Produce

Acreeage Summary

	<i>Sans Soucis</i>	<i>Le Niol</i>	<i>Grand'Anse</i>
Sandoricum indicum	20 $\frac{3}{4}$	6 $\frac{1}{2}$	63
Agati	—	—	2
Takamaka	39 $\frac{1}{4}$	43 $\frac{1}{2}$	38
Sandragon	—	—	41
Total : 254 $\frac{1}{4}$	<u>60$\frac{1}{2}$</u>	<u>50</u>	<u>144</u>

*Summary of Forest Produce 1955.***Timber**

<i>Species</i>	<i>Planks</i>	<i>Madrier</i>	<i>Posts</i>	<i>Rafters</i>
Albizzia	2897	—	—	—
Agati	206	—	—	—
Breadfruit	2894	—	—	—
Bois Rouge	—	—	3564	116 units
Capucin	—	11	2167	—
Durian	155	140	—	—
Melia Dubia	72	354	—	—
Sandragon	—	300	—	—
Santol	1677	1811	—	—
Takamaka	—	296	—	—
Total running feet	<u>7301</u>	<u>2912</u>	<u>5731</u>	<u>116</u>

Other Produce.

Cordwood	629 cords	Mixed Charcoal	1,222 tins
Cinnamon Leaves	119,686 kilos	Latanier Leaves	21,728 units
Cinnamon Bark	53,960 kilos	Coco Maron Leaves	1,846 units
Capucin Charcoal	2,919 tins	Bananas	49 bunches

Note : Cinnamon harvested by Departmental labour, and cordwood for distillery fuel, is excluded.

2. VETERINARY WORK AND LIVESTOCK

The Stock Inspector (Mr. Donald Morgan) was, as previously, available to the public for the treatment of livestock and in an advisory capacity, was responsible for any necessary treatment of Government livestock, and supervised those in charge of Government livestock at Union Vale, Souvenir, and out at stud. He was also responsible for animal quarantine and the issue of health certificates relating to animal exports. The Agricultural Officer (Mr. Serge Savy) supervised those in charge of Government livestock in West Mahe.

Veterinary and Quarantine Work.

The Department continued to operate its animal clinic at Union Vale, on the outskirts of Victoria. Nominal fees were charged and free treatment was given where owners could show their inability to pay. Mineral salts for cattle and poultry and certain veterinary medicines and sundries were sold at a small percentage over landed cost. The Stock Inspector visited sick animals on payment of a nominal fee and transport cost, and gave advice in the course of his normal tours. An unduly large proportion of his time was taken up with the ailments of the domestic pets of Victoria residents, work which could well be done by a private practitioner. Unfortunately no retired Veterinary Surgeon interested in having a few private cases has, as yet, settled in the Colony. No epidemic or unusual incidences of disease occurred. Coccidiosis and eye worm in poultry, internal and external parasites in all livestock, mineral deficiencies in cattle, poultry and pigs, difficult calving, bloat, accidents, and poisoning, were the main problems. Fowl-pox inoculation was offered free, but there was little demand.

In addition to minor dressings the Stock Inspector carried out the following:

Clinical examinations	532
Burdizzo castrations	20
Open-method castrations	36
Ovariectomy (bitches)	4
Minor operations	32
Fowl-pox vaccinations	108
Smears	14
Faecal examinations	8

The Quarantine Stations at Hodoul and Long Island were maintained and inspected, and were used for the following arrivals: 3 bulls, 8 ducks, 3 pigs, 1 dog. Certification was provided in connection with the export of 70 land tortoises, 1 dog, 1 cat. The R. S. P. C. A. (Seychelles Branch) was most generous in providing improved accommodation for small livestock under treatment at the Veterinary Clinic. The Society also pressed for the removal of the small livestock Quarantine Station from Hodoul Islet to a site at Union Vale, but owing to the small average numbers of such stock which arrive for quarantine each year and the adequate (though not ideal) accommodation at Hodoul the Department could not support any proposal involving expenditure of public funds.

Government-owned Livestock under the Department's charge.

Cattle:

At the year's end the herds totalled 234, 34 less than the previous year. Some progress was made with the policy of culling along the lines outlined in the 1954 Report and in concentrating stock-keeping at Grand'Anse and Union Vale (and its hill-station, Souvenir). Stud bulls were available to the public at Union Vale, Grand'Anse, Souvenir, Anse Boileau and three private estates.

The Sindhi and Friesian first crosses continued to be entirely satisfactory, but there was evidence during the year that these animals should not be served by a Friesian bull as the progeny lack vigour. First crosses will therefore be served by Sindhi bulls in future.

It is occasionally argued that Jersey would have been a better choice than Friesian as the European stock for up-grading milk yield and that the low milk yield of Sindhis makes these latter an unfortunate choice for the other parent. Such objections cease at once if the critics become the proud owners of first cross Sindhi and Friesian animals. Possibly Boran up-graded by Jersey, or other combinations, would have given equally good results, but we have no evidence that results would have been better.

Union Vale remained the centre of activity and auctions of improvement (and slaughter) stock were also held there. Twenty good heifers were auctioned as improvement stock, forty-two beasts were auctioned for slaughter, and thirty-two week old surplus bull calves were supplied to the Hospital for slaughter, there being no demand for weaned bull calves for rearing. Eighteen good heifer calves were selected for replacements in the herds.

191,226 pints of milk were produced at Union Vale from an average of 60 cows in milk, giving an average annual production per animal of 3,187 pints. The highest individual yields for cows completing a lactation during the year were:

Friesian ("Francine")	:	4,703 pints in 274 days.
Sindhi and Friesian ("Sabine")	:	3,440 " " 314 "

30,153 pints were fed to young stock and the remainder (161,072 pints) supplied to Government Institutions and retailed to the public. As previously, deliveries to the public were in foil-capped bottles.

At Union Vale record-keeping was improved, the dairy was re-roofed and improved and a new cooler installed, and a third silage pit dug. At Grand'Anse the two new calf pens were completed and fully stocked with the young animals which, previously, had been straining the fodder resources of Union Vale or, still worse, had been accommodated at an estate where the standard of animal husbandry was inadequate. The Grand'Anse terraces were highly productive of elephant grass and a silage pit was commenced at the end of the year. The "Plateau Coton" grazing land at Grand'Anse improved out of recognition as a result of regular grazing.

As will be seen from the table showing the stock position only seven animals were left at St. Anne, Anse Boileau, and Curieuse and these were either working or stud bulls or cows used for the Managers' milk supply. As a result of this the overall standard of Government's animal husbandry was greatly improved and losses which can be classed as "avoidable" were much reduced. Each of the three principal stations has its special troubles however — at Union Vale the terrain is very steep and rocky and falls are too frequent, at Souvenir (where supervision is only semi-skilled and conditions seem to be favourable to the trouble) bloat is a constant threat, while at Grand'Anse complications at calving have been frequent.

A supply of "Coopertox" (containing toxaphene) was obtained and the Grand'Anse dip was re-filled with this instead of the arsenical dip previously used. The effect has been remarkable and Buffalo fly is no longer a problem at that station. As previously, the fly caused little or no trouble at Union Vale, where the arsenical dip continues to be used. The marshy dungsoiled margins of a mangrove swamp which adjoin the Grand'Anse cattle shed probably formed an ideal breeding ground for the fly at all seasons. No adverse effects were noticed as a result of using the toxaphene dip.

The aim in feeding was to use the highest possible proportion of Colony-produced feed (elephant grass, ensilaged elephant grass and maize, and poonac) even if this resulted in a slightly lower milk yield than might have been obtained by increasing the ration of imported maize.

As has been stated elsewhere in this Report the demand at an economic price for animal products is far from brisk. Few keep more than one or two animals. It is far from easy to encourage more and better cattle-keeping under these circumstances, the fertility-building argument being insufficient in itself. However, a gradual infusion of new blood into the Colony's cattle is bound to have a beneficial effect and no relaxation of the improvement programme is contemplated. Three young Friesian bulls, kindly chosen for us by the Kenya Government's livestock officer, were purchased with the last of C. D. & W. funds and appear to be very promising additions.

Pigs

The Department's main contribution to pig improvement was the breeding of Large Whites and the sale of progeny by auction. Three breeding sows were in use and sales totalled 31. Two gilts and one young boar were imported from E. Africa. A new piggery was built at Union Vale and production of improvement stock of the best type should now increase. Pig keeping was confined to Union Vale, where the animals could be given the best possible conditions. It can now be said, as it

certainly could not when pigs were kept at Anse Boileau, Ste. Anne, and Curieuse, that the Department's pig-keeping forms a good and useful demonstration to the public and the animals sold are a credit to the Stock Inspector.

Poultry.

Unfortunately there were just insufficient funds left from the C. D. & W. grant to allow for the importation of new R. I. R. stock in 1955 and there were signs of degeneration at the year's end. This will be remedied in 1956, perhaps by the importation of hatching eggs. The flocks, of all ages, totalled 60, and the year's egg production was 186 dozen.

39 pullets and cockerels were auctioned, 32 dozen hatching eggs were sold at fixed prices, 6 dozen incubated, and the remainder supplied to Government institutions. Two Aylesbury drakes and six ducks were imported in August, on the advice of the Kenya Veterinary Department, and seemed to be well suited. 160 hatching eggs were sold to the public at fixed prices.

3. PRODUCE INSPECTION AND LABORATORY WORK.

Mr. J. F. G. Lionnet remained responsible for the inspection of produce prior to export and for laboratory work in connection with this and other duty. He was concerned with trials of imported insect parasites and predators and was responsible for import and export certification in connection with plants and plant parts. Work on pests is referred to in Section II (8).

(a) *Laboratory.*

Produce for export, fermented liquors and miscellaneous samples totalled 496, as compared with 765 and 753 in 1954 and 1953 respectively. The control of cinnamon leaf oil quality continued to provide most of the work, 393 samples being examined. The following table records the result of examinations of fermented liquors in recent years. These samples are the result of seizures by the Police and may consist of fermented sugar cane juice, fermented coconut toddy, or liquors known as "La Puree", which may be fermented from a variety of substances.

	1951	1952	1953	1954	1955
No. of samples of fermented liquors examined.	151	222	253	275	100
Percentage of samples found to be "La Puree".	30.0	26.5	16.1	22.5	36.0

(b) *Inspections.*

The Produce Inspector at the Custom Sheds, as was the case in previous years, was responsible for the work of inspection and, when necessary, for the sampling of copra, cinnamon bark, dry patchouli leaves and dry salted fish.

In general the quality of the produce deposited for export was very satisfactory. Few lots of copra, after examination with Assessors selected by the Director of Agriculture, were declared unfit for export and rejected. There has been a gradual improvement in the quality of copra deposited for export in recent years, those manufacturers who used to send consistently unsatisfactory copra having improved their method of manufacture.

Export permits and certificates for agricultural produce were issued, as usual. Import permits for plants and plant parts were issued after examination. Certificates were issued, after examination, of consignments of plants and plant parts intended for export.

As in previous years, advice was given to planters and manufacturers of agricultural produce whenever requested.

4. UNLEASED CROWN LANDS.

In the Departmental Annual Reports of some twenty years ago it will be observed that the Department had charge of certain upland unleased Crown Lands, which received little more than patrolling, and of township gardens, Long Island, and other small areas in and near Victoria. From that time until 1948 Government continued to purchase land — for water-catchment, for new institutions, for future re-forestation, for investment of surplus funds, &c. Very few areas were sold or leased, indeed when the leases of several estates on Mahe and Praslin and of the Aldabra group expired these were not renewed. By 1949 the Department and its subsidiary (Grand'Anse Estates) had charge of an estimated 14,500 acres of land, including two coral atolls, one coral island, three granitic islands, several islets, some 2,500 acres reserved for re-forestation or as catchment areas, and some 3,500 acres of former Seychelles Produce Co. Land.

The Department became a producer, in quantity, of nearly all the local-market and export products of the Colony, with profit as an essential objective. Despite high produce prices an adequate return on the capital value of the land was never achieved and the chief casualty in the battle was work by the Department in the interest of private producers.

By 1953 it was clear that apart from land reserved for re-forestation and catchment areas, and small areas for trials, demonstrations and livestock up-grading, the Department would be well advised to divest itself of the remainder. The first step was to bring the subsidiary known as "Grand'Anse Estates" under full control and it was then suggested to Government that leasing of Crown Lands should proceed, with special care as to terms of lease.

In January 1955 "Grand'Anse Estates" ceased to exist, and all activities on former "G. A. Estates" land had to be accounted for in the Colony's estimates. The Department began to prepare for the time when, freed from the absorbing task of estate management, it could concentrate on those useful agricultural activities which cannot be performed by the public. Government leased the Aldabra Group and started negotiating the lease of part of St. Anne in compensation for a property which it had occupied for use as a teachers' training college. Fourteen additional leasehold smallholdings were allocated. When Crown leases expired the properties were re-leased. However, the total disposal was only a fraction of that which will be necessary to free the staff for really useful work.

The manner of disposal of Crown Land is the subject of much difference of opinion. Leasing or sale as sizable estates would be the simplest solution as supervision would not be a serious problem and continuity of occupation would be fairly certain. Such a solution is favoured by many planters with money to invest. In some cases large leases are indeed the best answer, but it is thought that Government should also continue to make available leasehold small holdings which incorporate in their terms of lease provisions which will result in diversification of cropping, food production, and animal husbandry. It would be idle to assume that such conditions would be acceptable in the leases of sizable estates. That some regimentation is needed in the case of smallholders without previous experience of estate management is, it may be said, admitted by the larger estate owners from their experiences with "share-croppers". It is abundantly clear that the intensive husbandry

likely to occur on a smallholding can be productive of a much higher total yield per acre, and a more varied one, than is normal on even the best-run large estates. It is for this reason that smallholdings are favoured by the Department.

In this transition period a balance must be struck between absolute neglect of unleased Crown lands (with consequent creation of a bad example to the public) and the need for reducing activities to cut down the risk of expenditure exceeding revenue by a wide margin as the long post-war "producers' honeymoon" comes to an end. If the smallholding scheme is to be a success it must expand slowly and areas destined for it must probably remain for some years under little more than bare maintenance with rights to harvest cinnamon and coconuts perhaps subjects for public tender. Such a method of earning a modest revenue from lands awaiting disposal is met with frequently in other territories, the many thousands of acres of Government-owned coconut land in Tanganyika being an example. Such lands are not an example of good husbandry, but they do not — and this is more important — cause unwarranted expansion of a Government Department.

Upland Unleased Crown Lands.

These lands are destined either for re-afforestation and operation on a continuous-yield basis or for retention as patrolled unimproved forest and scrub in the interests of water-conservation. Legislation passed in 1955 permits such land to be designated as Forest Reserve, after demarcation. They include :

The Central Forest Area of Mahe
Part of Rosebelle Estate, Mahe
Midlands Estate, Praslin
Fond Boffay „ „
Newcombe „ „
Planneau and Bardeau, Mahe
Areas of Foret Noire, Grand'Anse
and Anse Boileau Estates, Mahe

Apart from the early years of the re-afforestation scheme revenue from these lands can always be expected to exceed expenditure by a small margin. The re-afforestation scheme is reported on in detail in Section II (i). Exploitation was both direct and (as regards cinnamon leaf, bark, and cordwood) by tenderers. Charcoal burners were licensed, the fee covering fixed amounts of cordwood. In the Forest's Report, Section II (i) is a description of work on the small nature reserve in Praslin known as the Vallée de Mai.

The forester and his staff were responsible for most upland unleased Crown Land exploitation and production from these lands (apart from that for certain Departmental use) is shown in the table in Section II (i).

Unleased Coconut Land.

Crown Land so classified is where the chief cash crop is coconuts and includes land with a mixed cover of coconuts, timber and firewood trees, cinnamon, &c. and many areas where the term "mixed forestry enterprise" is more appropriate than "coconut plantation". The coastal area of Grand'Anse Estate is in course of development as a demonstration coconut estate and is referred to in Section II (8), but its yield is included in the table below. On the higher land at Grand' Anse, and on all other Unleased Coconut Land, no attempt was made to do more than keep down brush, harvest, and maintain in adequate order, as the majority is due for early lease or other disposal.

In addition, there are scattered coconuts in Victoria township Crown Lands and in some upland Crown Lands, but in the case of the former praedial larceny makes attempts to collect nuts unprofitable.

From the portion of St. Anne (yielding about half the island's crop) still occupied by the Department and from Long Island, husked nuts were sold by tender, the system working reasonably smoothly. Other areas with no driers sent their nuts to the nearest Departmental drier. Theft of nuts was very common, despite the efforts of Managers and watchmen, Crown property being considered, as usual, as even fairer game than private property. Apart from Union Vale, where collection improved after all trees had been numbered and the crop-on-tree recorded, yields from all Unleased Coconut Land were lower than previous year. Owing to leases and occupation at Anse Boileau and St. Anne at various dates in 1955 lands with a normal yield of well over 250,000 nuts per annum were no longer operated by the Department so any comparison of nut or copra yield by these estates, or total nut and copra yield, with the figures of previous years is misleading. Yields by Grand' Anse and Foret Noire Estates, can, however, be usefully compared with those of previous years.

The percentage fall in nut yield of Grand' Anse and Foret Noire Estates, compared with 1954, amounts to 12% compared with the country-wide average fall (based on copra production for export) of 9%.

Melittomma control with paradichlorobenzene was carried out on Curieuse, which became infested in 1953/54.

Re-building of the drier at Grand' Anse early in 1956 was planned at the end of the year.

Coconut collection and disposal from Unleased Crown lands.

<i>Origin.</i>	<i>Nuts collected.</i>
Grand' Anse	238,077
Anse Boileau	369,545
Foret Noire	177,155
Union Vale	56,879
Ste. Anne Island	370,976
Minor Mahe Crownlands	33,661
Praslin Crownlands	21,428
Curieuse Island	166,665
Long Island	13,785
	<u>1,448,171</u>

Disposal of Nuts

(a) Stock 1.1.55	199,656	(d) Converted to Copra	1,416,821
(b) Collected 1955	1,448,171	(e) Sold & free issue	207,534
(c) Purchased	79,570	(f) Bad nuts	8,020
		(g) Stock 31.12.55	95,022
	<u>1,727,397</u>		<u>1,727,397</u>

Notes :

- (a) Most of this excessive stock was at St. Anne.
- (b) See previous table.
- (c) From smallholder tenants at Anse Boileau.
- (d) At St. Anne, Anse Boileau, Grand'Anse, Foret Noire, and Curieuse.
- (e) Majority by tender from St. Anne. Free issues (to creches) account for 1,538. 7,383 were sent to Victoria market stall for retail sale.
- (f) Most of this figure was the result of the excessive opening stock at St. Anne.
- (g) 46,094 of this figure represented stock awaiting collection by tenderer at St. Anne.

Copra Production and disposal

- | | | | |
|---------------------|--------------|---------------------------|--------------|
| (a) Stock 1.1.55 | 17.159 tons | (c) Consigned for export | 186.926 tons |
| (b) Production 1955 | 195.551 tons | (d) Consigned for milling | 21.645 tons. |
| | | (e) Stock 31.12.55 | 4.239 tons. |

Notes :

- (a) At driers.
- (b) At St. Anne, Anse Boileau, Foret Noire, Grand'Anse, Curieuse.
- (c) Actual export was 180.943 nett, a small balance is remaining in Customs sheds at 31.12.55.
- (d) Sold by tender. The tonnage was insufficient to meet Departmental consumption of poonac but millers supplying poonac to the Department were able to obtain the balance of the copra they required from other sources.
- (e) At driers.

Conversion ratio :

Conversion ratios calculated from recorded statistics varied widely according to average nut size, efficiency of drier, and efficiency of management — the latter being a most important factor.

*Average number of nuts required to
produce one ton of copra.*

Drier :

- | | |
|---------------------|-------|
| (a) Foret Noire | 6,036 |
| (b) Grand'Anse | 6,042 |
| (c) Anse Boileau | 6,705 |
| (d) Curieuse Island | 8,300 |
| (e) St. Anne Island | 9,473 |

Notes :

- (a) A considerable improvement over the 1954 figure of 7,104, due to better management.
- (b) A decline of 452 per ton compared with 1954, attributed to drier trouble.
- (c) A decline of 463 per ton compared with 1954, attributed to having to take Grand'Anse nuts during part of the year.

- (d) This low ratio is approximately the usual average for the drier, where both Curieuse and Praslin Crownland nuts are converted.
- (e) This very poor average, compared with the 1954 figure of 7,454 was due to a record crop in 1954 and the breakdown of handling and drying arrangements. Conversion was stopped in June and thereafter nuts were sold by tender.

General :

Apart from the leper island (Curieuse) and a drier on the future demonstration area at Grand'Anse, there is little justification for Departmental operation of driers. Nuts from other unleased Crown Lands can be readily sold to commercial driers.

Other activities on Unleased Crown Land.

Cinnamon : In addition to the sales by tender recorded in the table in Section II (i) cinnamon was also harvested by Departmental labour at Grand'Anse, Anse Boileau, and Forêt Noire Unleased Crown Lands and was distilled at the former. A total of 492½ tons of leaf yielded 2836 kg. of oil a yield of 5.8 kg. of oil per ton of leaf (as compared with 5.4 kg. in 1954). 23½ tons of dry cinnamon bark were prepared from 45½ tons of fresh bark, also by Departmental labour (on piece work). None of this work constituted a demonstration and west coast Departmental cinnamon harvesting and distillation will it is hoped, be discontinued within the next year or two in favour of sale by tender. The sharp fall in leaf-oil price late in the year upset the calculations of some tenderers but if prices remain steady for a time further sales should present no difficulty.

Sugarcane : Cane was grown at Grand'Anse, Anse Boileau, and Forêt Noire Unleased Crown Lands for supply to Government-controlled liquor shops (Bacca Clubs). Milling for the two west-coast shops was concentrated at Grand'Anse during the year, where a new and efficient animal-powered mill was installed. The crop is grown at a small profit to the Department and seems to be one which may have to be grown by Government for some years yet. The cane at Grand'Anse only is being concentrated in the coastal area and should, in time, constitute a demonstration of good husbandry. The needs of the liquor shops were met and the year's production of 360 tons (as compared with 490½ tons in 1954) is more a reflection of demand than of possible yield.

Staff Gardens : The tradition of shifting cultivation, disregard of erosion, and non-use of manure dies hard. Under certain conditions these traditions are of course based on the outlook of the landless labourer that he has nothing to lose by getting as much as he can with the least amount of work. Demarcated gardens are taken to unhappily and a whole new set of sins develops, the principal being non-rotation and over-cropping. Such gardens also create a problem with regard to eelworm, though fortunately the major tropical food crops are unaffected or highly resistant as compared with some of the temperate climate crops on which so much time was spent in post-war years. On Grand'Anse the old system has, at last, been stamped out and it is expected that grass fallowing of entire blocks of demarcated gardens, aided by free manure from the stock-farm, can maintain productivity. The Manager was officially permitted to operate a small market garden for his own profit and this serves as a demonstration. Gardening on erodible slopes was forbidden on other west coast Unleased Crown Lands. A number of staff gardens under the eye of the Senior Forest

Ranger on Upland Unleased Crown Land are also becoming a credit to the Department, here again the officer having official permission to run a market garden as a demonstration. As funds have permitted, the immediate surroundings of cottages in the coastal area of Grand'Anse are being bench terraced, both to save their foundations from being eroded to destruction and to provide garden land protected from erosion.

Livestock : Activities have been referred to in Section II (2).

Foodcrops : In view of the planned stoppage of Departmental food production (other than on demonstration and nursery areas) a further reduction was made in 1955 and by the end of the year the arable foodcrops due for harvest in the first half of 1956 were, apart from the yield from two small citrus groves, many breadfruit trees, and some bananas, the last foodcrops which will be grown in bulk. 1955 production on Unleased Crown Lands amounted to some 21 tons of roots, 1,360 kg. of cabbage, and 7 tons of sundry vegetables and fruit, excluding breadfruit used for animal feeding.

Fodder Crops : Although the larger islands of the Colony have no true dry season rainfall is normally low from June to August and there is an annual shortage of fodder. Irrigation can remedy this in those few areas where the dry-season flow in the streams is sufficient to permit night-time storage for irrigation. Unfortunately it often happens that all is needed for domestic use. A more reliable method than irrigation is to grow a somewhat larger acreage of fodder than is required for wet-season use and to ensilage the surplus for the shortage period. This is done at Union Vale and is planned at Grand'Anse, where a considerable acreage of manured elephant grass on terraces is being grown in anticipation of terraced land in good heart being required for trials. In 1955 there was a large excess wet-season crop of elephant grass at Grand'Anse and cutting was at too mature a stage.

Works, buildings & equipment : The Department took over the cottages, houses, stores and other installations, and equipment, of the now defunct "Grand'Anse Estates". The chief result, as with staff and production matters, was a reduction in the amount of paper-work.

The required change-over from the rather undefined systems of store-keeping, &c. which had developed over the years with the estates to those approved for Departmental use was started, but much remained to be done at the end of the year. As labour is almost 100% illiterate and larceny is prevalent the control of stores used in the field is difficult and time-consuming, and estate storekeepers tend to use the asiatic village shop as their model. A move towards more orderly, clean, and fully recorded storekeeping and disposal of unwanted stocks was, very rightly, recommended by the Principal Auditor during the year.

Apart from the works already referred to elsewhere in Section II activities were chiefly concerned with maintenance and repairs, which, due to thatched roofs, termites, the constant decay of the wet tropics, the February winds, &c., was an expensive matter. The distillery at Grand'Anse was frequently under repair.

The Central Oil Expeller and Distillery in Victoria remained under care and maintenance.

Ox-carts made with imported wheels and locally made body were completed and put into use at Grand'Anse. Watchmen's punch-clocks were introduced at two points. A boat shed and pirogue were provided for the convenience of labourers at Grand'Anse.

Gardens and sports grounds: The Mt. Fleuri Botanical Gardens were kept tidy and colourful within sight of the main drive, and a start was made with surfacing the latter. The tortoise-pen was improved. The new Manager's house was occupied. Government House gardens, Fiennes Esplanade, Gordon Square and the College and Hospital grounds were kept adequately tidy. A proposal for the College to employ and supervise its own groundsman and staff was submitted and approved.

Rest House: The Department continued to operate the rest-house at Grand'Anse. This is run as a convenience for visiting officials and others.

Creches: These were continued at Grand'Anse, Anse Boileau, and Foret Ncire. They consist of small buildings, with kitchens and lavatories, staffed by elderly untrained women. Government's female labourers may deposit their children at them for care during working hours. Some simple free nourishment is provided.

Public Liquor Shops: These were continued at Grand'Anse and Anse Boileau (Anse Louis). They are known as "Bacca Clubs" but are not clubs.

Retail sales of produce to staff: These were continued, but on a diminishing scale owing to reductions in food production on unleased lands. Retail sale of coconuts to labourers on unleased coconut lands must continue but no other retail sales especially for staff should be necessary.

Old People's Settlement: This consists of a group of cottages in an area of unleased Crown coconut land at Anse Louis. It was established shortly after the war with the purpose of providing free housing and garden for aged labourers employed, or previously employed, by "Grand'Anse Estates". It can be compared with "grace and favour" housing, and is presumably a development from the old custom (which has many disadvantages) of leasing house plots at a nominal rent. It was proposed, and accepted, that the Labour and Welfare Department (the authority responsible for public assistance) should take over the Old People's Settlement.

The catching of hawksbill and green turtles: This was stopped on all unleased Crown lands, as this very old established practise had become inadvisable and unremunerative.

Retail sales to the public of goods obtainable from private retailers: The Department has the acknowledged duty to sell certain plants, seeds, insecticides, &c. the increased use of which it is desirable to promote, and even to subsidise the price of these where their increased use is particularly desirable. For many years, however, the Department has retailed vegetables, fruits, coconut oil, coconuts, coco-de-mer, hat-making material, cut flowers, thatching, charcoal, bamboos, ornamental plant containers, planks, poles, milk, ornamental plants, &c. and efforts have been made to reduce all these activities. Oil sales were stopped in 1955, no more charcoal (other than for the Hospital and Public Works Department) is being made, vegetables and coconut sales to the public will cease in 1956, and ornamental plants are now raised only to order.

Supply to other Departments: The Department supplied vegetables, fruits, oil (at Curieuse only), coconuts, hat-making material, blind-making material, thatch, charcoal, milk, piglets for rearing, calves for slaughter, cordwood, split firewood, sawn planks, beams, poles, &c. to other Departments. As regards Crown forest products Government Departments have always been the main consumers.

5. LEASED CROWN LANDS.

Leased Estates : The Aldabra group of islands was leased to a local island owner and businessman on terms designed to maintain the green turtle industry, give protection to rare wild life, and reserve mineral and guano rights to Government.

The islands Marie Louise, Desnoëufs, African banks, Remire, and Eagle were leased to a coasting-vessel and hotel owner on terms designed to maintain the sea-birds egg industry.

Except for a short period when the Aldabra group was directly operated by Government both groups of islands have been leased previously.

Negotiations likely to lead to the lease of part of St. Anne Island were in progress during the year,

Felicité Island was inspected in detail. Terrain Maillet was inspected and re-lease recommended.

Leased Township Land : There are a number of short-term leases of house plots at rents often as low as 50 c. per month. The result is somewhat unsatisfactory as the houses erected are temporary shacks and the land is impoverished and often eroded. These leases were granted, and are still being granted, for reasons quite unconnected with optimum land use. So far as the Department is concerned they are highly undesirable.

Leased Smallholdings : A scheme for leasing areas of Crown Land as smallholdings, with terms of lease requiring tenants to engage in terracing and other soil and fertility building operations, food production, animal husbandry, &c. was started in early 1953, the original leases being of six 10 acre holdings and one 5 acre holding at Anse Boileau. As forecast in the 1954 report one of the original tenants (of a 10 acre holding) received notice to quit by the end of the year.

The smallholders referred to remain bound under the terms of their leases to sell all produce to Government other than that consumed by themselves and other than milk, honey, livestock, and home-processed goods such as biscuits &c., but plans were made to remove this restriction in 1956. 1955 will therefore be the last year when statistics of production for sale, and cash income, will be available. It is satisfactory to be able to report a still further increase in average monthly production of food-crops for sale, despite an exceptionally dry mid-season. The following table is self-explanatory :

<i>Plots No.</i>	<i>Coconuts (Units).</i>	<i>Root & other Vegetables. Kgs.</i>	<i>Cash Income Rs.</i>	<i>Sq. Yds. Terracing.</i>
1	916	223	117.65	65
2	595	257	109.79	51
3	1,027	132	113.30	61
4	709	424	119.09	52
5	936	270	130.49	48
6	590	464	140.91	57
7	1,916	330	192.61	(Level land)

The state of husbandry on the holdings varies considerably. One tenant spends rather more time fishing than farming. On another, where the tenant made a very slow start, such crops as pineapples, coffee, and

chinese cabbage are being tried with good prospects of success. A third, occupied by an ex-Sergeant of the Royal Pioneers, is as good an example of a mixed smallholding as is likely to be seen. No attempt is made to enforce anything more than certain basic principles.

Four holdings of five acres and slightly under were demarcated at Rosebelle Crown Land and leased early in the year, and a further fifteen holdings of about 5 acres each were demarcated at Anse Boileau and offered to lease in October. In both cases there were far more applicants than holdings.

In the case of the Anse Boileau leases short-listed applicants were not selected on the site, with the result that many of those selected rejected the holdings allocated to them when they found that they had not been allotted what they considered to be the "plum". Both at Rosebelle and Anse Boileau a number of the holdings were without housing, which, in the case of most applicants, is a disadvantage. Rents were calculated at 4% of the approximate "non-boom-years" value of the land, much of which, as it happens, was purchased by Government at an average price of Rs. 60 per acre (pre-war). There have been complaints that the rent is too high at Anse Boileau. All these new leases provide for compensation for bench terracing in the form of rental deductions based on an estimated cost per acre for terracing of Rs. 700. Several tenants are already making good progress, others have not shown promise, and a few are clearly unsuited. The only concern of the Department is to choose tenants likely to be successful small farmers, but selection (which is by a Board) is influenced by other, perhaps quite laudable, concerns unconnected with farming. The scheme will fail if the holdings become a "poor-relief scheme" or a reward for long service in some quite unrelated career.

It became clear that termination of tenancy at three months notice, as laid down in the original 1953 leases, was unduly brief and it is hoped that at least nine months can be given in future, this period corresponding with planting-to-harvest of the longest-term annual crop.

The Agricultural Officer was responsible for supervision and advisory work on the smallholdings. This work could well be the nearly whole-time occupation of a well qualified member of staff as it presents great scope for increasing production per acre in the Colony.

6. INSPECTION OF PLANTATIONS.

This work, which also includes duties in connection with leased and unleased Crown Lands, is largely concerned with permissions under the laws relating to the felling of trees in river reserves, the lighting of fires, and the felling of breadfruit and jackfruit trees. The Inspectors also carry out valuations of labourers' crops in cases of dispute with employers and estimate coconut yields in cases of suspected illegal coconut dealing. The Manager of the Botanical Gardens acted as Inspector for Mahe and neighbouring islands and the Agricultural Assistant, Praslin, in respect of Praslin and neighbouring islands. Permissions which involve no more than legitimate thinning-out of growth in reserves were, as usual, readily given and permissions for small fires were only withheld in times of drought. No permissions for clearing by fire are ever given. The restrictions on the felling of breadfruit and jackfruit on private property are a curious feature of the law reminiscent of the compulsory famine reserve plots in African territories, yet they are accepted without question where compulsory arable food production would be resented. The restrictions are not, of course, a burden to the larger properties while the cottager values his breadfruit tree even when it monopolises the whole garden.

7. INVESTIGATIONS, TRIALS, EXTENSION WORK AND SUNDRY SERVICES IN THE INTERESTS OF PRODUCERS.

Investigations and Trials.

Full scale investigations in the Colony have always been carried out by visiting experts, e.g. Holdsworth-Haines, Fitzgerald, Brown, Simmonds, Wheeler and Ommaney, etc. who worked on the essential oil industry, coconut scale, *Melittomma insulare*, and fisheries resources. In 1955 Ridley and Percy, under a scheme partially financed by the Colony, investigated the sea-bird egg industry from May 17th. until September 16th. The Department co-operated. The report is expected in 1956,

The Department spent what time could be spared from its too numerous direct-production activities on a number of other problems, including the following :

Coconuts : Progress of *Scolia ruficornis* (introduced to North Island by the Department) was studied with a view to determining whether parasitisation of *Oryctes monoceros* was occurring, and the colony of wasps was found to be increasing. Five despatches of *Rhizophagus dispar* (possible egg-predator of *Melittomma insulare*) from the Commonwealth Institute of Biological Control were released, a survey of existing percentage infestation by *Melittomma insulare* being made in the Cerf Island release area.

Vanilla : The Forester's work with this is reported in Section II (i).

Citrus : Despatches of parasitised nymphs of *Aleurocanthus woglumi* from the Commonwealth Institute of Biological Control were released and successful establishment of the parasite, *Eretmocerus serius*, was obtained in the Botanical Gardens.

Forest Trees : The Forester's species trials are reported in Section II (i).

Wireway : The Forester's trials are reported in Section II (i).

Patchouli : A Malayan strain was imported and quarantined.

Cinnamon : The Department carried out distillations to determine the effect of drying of leaf on leaf-oil yield and quality, and prepared bark from selected trees and despatched to the Colonial Products Laboratory. This work is directed towards determining whether there are distinct strains of cinnamon in the Colony, and if so whether some are superior to others.

Foodcrops : A preliminary trial of tomato varieties from the U. S. Department of Agriculture was carried out. Two sweet potato varieties were imported and quarantined

Buffalo Fly : Toxaphene dip was tried at Grand'Anse, with excellent results. A supply for spraying was sent to North Island to determine whether the fly can be eradicated.

Extension Work : Information was supplied to enquirers, and/or published, on a wide range of subjects, including coir, canning, cinnamon bark oil, vanilla culture, cinnamon quill production, turtle product marketing, agar-agar production, hand tea manufacture, mineral samples, gardening problems, pest control, coconut husbandry, forestry, animal husbandry etc.

The Department's "Agricultural Notes" were published monthly in the Government Bulletin until May, when the Director went on leave. The Forester also contributed to the Bulletin.

A demonstrator was stationed in Mahé for the instruction of planters in the use of paradichlorobenzene for the control of *Melittomma insulare*. 36 demonstrations were held.

A start was made with bringing the coastal area of Grand'Anse into a condition which would constitute a demonstration of good coconut husbandry. This will take several years.

Two staff members operated market gardens on Crown Land on the understanding that the gardens constituted a public demonstration. Senior staff visited estates and gardeners on request and a few unsolicited visits were made while touring. The owners of many large estates do not, however, reside on them.

The facilities offered by the Commonwealth Bureaux were much used and appreciated.

Services in the interests of producers.

These included the following, most of which have already been referred to elsewhere in this Report :

Veterinary treatment, drugs and sundries.

Provision of stud bulls.

Sindhi and Sindhi X Friesian improvement stock at auction.

Crossbred poultry-improvement stock at auction.

Crossbred and purebred poultry-improvement eggs at fixed prices.

Tested imported temperate-climate vegetable seeds on non-profit basis.

Rat-tail bounty.

Yam cuttings to order.

Nursery stock to order.

Imported fertilisers, insecticides, and rat-poisons on non-profit basis.

Laboratory analyses.

Produce inspection.

Inspection and certification of plant and animal imports and exports.

Free lay-out of bench terraces and loan of terrace boards and heavy tools.

Pilot Scheme for Melittomma insulare control.

This scheme is a compromise between a large-scale trial of Brown's suggested method of controlling the pest and the treatment, at the taxpayer's expense, of all infested coconut trees in Praslin. It commenced in 1953 and all trees on 46 estates, with a total stated area of 1,758 arpents, had been inspected by the end of 1955. Nine estates, with a total stated area of 2,459 arpents were in course of inspection. 26,522 trees, found infested, had been treated by the end of the year. The year's work included the inspection of 23,286 trees, the treatment of 17,764, and the felling of 1,181 trees too far gone for treatment.

The subordinate field staff was increased from 4 to 8 in 1955 and 1,567 man-days were put in by these salaried men. 20,252 man-hours of unskilled labour, partly paid for by estate owners and partly from Scheme funds, were employed in addition. With declining copra prices and the natural scepticism of the small holder with few trees for any new-fangled ideas which may result in the felling of even one of them the Scheme had its difficulties, but on the whole progress has been far smoother than had

been anticipated at the start of the work. The fact that coconut growers on Praslin are getting "something for nothing" denied growers on other islands is probably the fundamental reason. A few independent characters, however, insisted on buying paradichlorobenzene and doing the work themselves — which is quite understandable.

As stated from the start eradication of the pest is not anticipated, and therefore no term can be set to the conclusion of the work. A decision will have to be made whether retreatments, are to be by the Department or by the growers, and if by the latter whether the work is to be subsidised in any way. In 1956 it should be possible to estimate with much greater accuracy than before the time which will be needed to complete the initial inspections and treatment. Estimation was previously based on an estimate of the number of trees in the island which is being revised as progress reveals the considerable areas of alleged coconut estates which are found to be unplanted owing to unsuitable soil.

It is fortunate that drastic ax-work, followed by tarring or even scorching by fire, was a traditional (and partially effective) method of *Melittomma insulare* control in Praslin. It is probably only for this reason that the ax-work involved in the Brown method of preparing for fumigation is acceptable. The coconut can, of course, stand the loss of quite a high proportion of the base of its trunk without ill-effect, outside the cyclone belt.

Mr. John Dookly remained in charge of the Scheme.

SECTION III

Legislation

Ordinance No. 1 of 1955 — An Ordinance to repeal the Food Production Ordinance, 1945.

The Food Production Ordinance, 1945, empowered Government to require landowners to devote up to 5% of their land to the cultivation of foodcrops and to allow each adult-labourer on their estate the rent-free use of half an acre of land for food-crop cultivation. The Ordinance also provided for compensation where labourers left the employment of the landowner and vacated their food-crop land. The Ordinance was repealed on Legal advice.

Government's powers under the Ordinance had not been used. The recent planting with coconuts of the few acres of certain outlying islands previously used for maize growing may have been a reaction to repeal. It is acknowledged, however, that in peace time there is little justification for legal interference with landowners who prefer to have all their eggs in one basket. Free garden land for labourers is also difficult to justify.

Ordinance No. 2 of 1955 — An Ordinance to provide for the establishment and Protection of Forest Reserves.

This Ordinance was modelled on similar legislation in many civilised countries and it is clearly essential to provide, so far as is possible, for continuity of forest policy.

Ordinance No. 3 of 1955 — An Ordinance to amend the Sale of Produce (Consolidating) Ordinance of 1942.

This Ordinance brings legislation up to date with current agricultural trends. The 1942 Ordinance, and the amending Ordinance, deal with licensing and record-keeping designed to discourage larceny and dealing in stolen produce.

Ordinance No. 18 of 1955 — An Ordinance to amend the Seychelles Agricultural Bank Ordinance, 1935.

This Ordinance simplifies the accounting procedure of the Seychelles Agricultural Bank, which is authorised to make loans to agriculturists on terms which are not burdensome.

The Patchouli Oil (Standard Quality) Regulations 1955.

These regulations repeal the 1949 Regulations under The Patchouli Oil Ordinance (No. 6 of 1934) and define more accurately the tests which an oil must pass to qualify for the description "Standard Quality".

SECTION IV

Staff and General

1. STAFF.

Mr. A. Jefferiss, B.Sc. Hort. N.D.H. continued as Director, assisted by Mr. S. M. Savy, B.Sc. Agric. (Agricultural Officer), Mr. E. Brewer (Forester), Mr. J. F. G. Lionnet (1st Laboratory Assistant) and Mr. D. Morgan (Stock Inspector). Other officers responsible directly to the Director were Mr. Albert Gendron (Botanical Gardens Manager and acting Plantation Inspector), Mr. John Dookly (Senior Melittomma Assistant), Mr. E. Pool (Agricultural Assistant Praslin), and, on the non-technical side, Mr. J. Laye-Sion (Chief Clerk). The Director was on overseas leave from June until late December and Mr. J. F. G. Lionnet was Acting Director during the same period.

Messrs. A. Hoareau and F. Hickey, two devoted officers of the Department who had served for many years, retired early in 1955 on pension. Messrs J. Savy and R. Albert, who had been employed on a temporary basis, were chosen for vacancies in Grade II of the non-clerical service. Learner L. Hickey resigned in order to go abroad.

Supervisory officers had the task of controlling a labour force of 600, which occupied most of their time.

2. GENERAL.

Four meetings of the Agricultural Board were held and valuable discussions took place.

Visitors to the Colony and Department included Comm. Jacques Yves Cousteau and Mr. Sodin, an eminent Swedish botanist. Lord Richard Percy, The Hon. Matthew Ridley, and Lady Anne Ridley were, as mentioned in Section II, in the Colony on an investigation of the sea-birds egg industry.

Finally, I wish to record my appreciation of the loyalty and enthusiasm of the staff under my control and the helpful attitude and constructive suggestions of many members of the agricultural, merchant, and official communities.

A. JEFFERISS,
Director of Agriculture.

